

PATENT COOPERATION TREATY

PCT

NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

Assistant Commissioner for Patents
United States Patent and Trademark
Office
Box PCT
Washington, D.C. 20231
ETATS-UNIS D'AMERIQUE

in its capacity as elected Office

Date of mailing (day/month/year) 17 October 2000 (17.10.00)	
International application No. PCT/GB00/00610	Applicant's or agent's file reference P57753WO
International filing date (day/month/year) 22 February 2000 (22.02.00)	Priority date (day/month/year) 25 February 1999 (25.02.99)
Applicant POLLITT, Clifford, Bruce	

1. The designated Office is hereby notified of its election made:

☒ in the demand filed with the International Preliminary Examining Authority on:
13 September 2000 (13.09.00)

☐ in a notice effecting later election filed with the International Bureau on:

2. The election ☒ was
☐ was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No.: (41-22) 740.14.35	Authorized officer Pascal Piriou Telephone No.: (41-22) 338.83.38
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PATENT COOPERATION TREATY

PCT

INFORMATION CONCERNING ELECTED
OFFICES NOTIFIED OF THEIR ELECTION

(PCT Rule 61.3)

From the INTERNATIONAL BUREAU

To:

AJELLO, Michael, John
 Urquhart-Dykes & Lord
 Greg's Buildings
 1 Booth Street
 Manchester M2 4DU
 ROYAUME-UNI

Date of mailing (day/month/year) 17 October 2000 (17.10.00)		
Applicant's or agent's file reference P57753WO		IMPORTANT INFORMATION
International application No. PCT/GB00/00610	International filing date (day/month/year) 22 February 2000 (22.02.00)	
Applicant CAIRN HOLDINGS (UK) LIMITED et al		

1. The applicant is hereby informed that the International Bureau has, according to Article 31(7), notified each of the following Offices of its election:

EP : AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE
 National : AU, JP, US

2. The following Offices have waived the requirement for the notification of their election; the notification will be sent to them by the International Bureau only upon their request:

National : ZA

3. The applicant is reminded that he must enter the "national phase" **before the expiration of 30 months from the priority date** before each of the Offices listed above. This must be done by paying the national fee(s) and furnishing, if prescribed, a translation of the international application (Article 39(1)(a)), as well as, where applicable, by furnishing a translation of any annexes of the international preliminary examination report (Article 36(3)(b) and Rule 74.1).

Some offices have fixed time limits expiring later than the above-mentioned time limit. For detailed information about the applicable time limits and the acts to be performed upon entry into the national phase before a particular Office, see Volume II of the PCT Applicant's Guide.

The entry into the European regional phase is postponed until **31 months from the priority date** for all States designated for the purposes of obtaining a European patent.

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No. (41-22) 740.14.35	Authorized officer: Pascal Piriou Telephone No. (41-22) 338.83.38
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PATENT COOPERATION TREATY

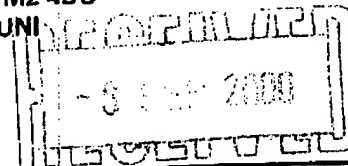
PCT

NOTICE INFORMING THE APPLICANT OF THE
COMMUNICATION OF THE INTERNATIONAL
APPLICATION TO THE DESIGNATED OFFICES

(PCT Rule 47.1(c), first sentence)

From the INTERNATIONAL BUREAU

To:

AJELLO, Michael John
Urquhart-Dykes & Lord
Greg's Buildings
1 Booth Street
Manchester M2 4DU
ROYAUME-UNI

Date of mailing (day/month/year)

31 August 2000 (31.08.00)

Applicant's or agent's file reference

P57753WO

IMPORTANT NOTICE

International application No.

PCT/GB00/00610

International filing date (day/month/year)

22 February 2000 (22.02.00)

Priority date (day/month/year)

25 February 1999 (25.02.99)

Applicant

CAIRN HOLDINGS (UK) LIMITED et al

1. Notice is hereby given that the International Bureau has communicated, as provided in Article 20, the international application to the following designated Offices on the date indicated above as the date of mailing of this Notice:
AU,US

In accordance with Rule 47.1(c), third sentence, those Offices will accept the present Notice as conclusive evidence that the communication of the international application has duly taken place on the date of mailing indicated above and no copy of the international application is required to be furnished by the applicant to the designated Office(s).

2. The following designated Offices have waived the requirement for such a communication at this time:
EP,JP,ZA

The communication will be made to those Offices only upon their request. Furthermore, those Offices do not require the applicant to furnish a copy of the international application (Rule 49.1(a-bis)).

3. Enclosed with this Notice is a copy of the international application as published by the International Bureau on
31 August 2000 (31.08.00) under No. WO 00/50365

REMINDER REGARDING CHAPTER II (Article 31(2)(a) and Rule 54.2)

If the applicant wishes to postpone entry into the national phase until 30 months (or later in some Offices) from the priority date, a demand for international preliminary examination must be filed with the competent International Preliminary Examining Authority before the expiration of 19 months from the priority date.

It is the applicant's sole responsibility to monitor the 19-month time limit.

Note that only an applicant who is a national or resident of a PCT Contracting State which is bound by Chapter II has the right to file a demand for international preliminary examination.

REMINDER REGARDING ENTRY INTO THE NATIONAL PHASE (Article 22 or 39(1))

If the applicant wishes to proceed with the international application in the national phase, he must, within 20 months or 30 months, or later in some Offices, perform the acts referred to therein before each designated or elected Office.

For further important information on the time limits and acts to be performed for entering the national phase, see the Annex to Form PCT/IB/301 (Notification of Receipt of Record Copy) and Volume II of the PCT Applicant's Guide.

The International Bureau of WIPO
34, chemin des Colombettes
1211 Geneva 20, Switzerland

Facsimile No. (41-22) 740.14.36

Authorized officer

J. Zahra

Telephone No. (41-22) 338.83.38

PATENT COOPERATION TREATY

PCT

- 5 MAY 2000

From the INTERNATIONAL BUREAU

NOTIFICATION CONCERNING
SUBMISSION OR TRANSMITTAL
OF PRIORITY DOCUMENT

(PCT Administrative Instructions, Section 411)

AJELLO, Michael, John
Urquhart-Dykes & Lord
Greg's Buildings
1 Booth Street
Manchester M2 4DU
ROYAUME-UNI

Date of mailing (day/month/year) 27 April 2000 (27.04.00)	
Applicant's or agent's file reference P57753WO	IMPORTANT NOTIFICATION
International application No. PCT/GB00/00610	International filing date (day/month/year) 22 February 2000 (22.02.00)
International publication date (day/month/year) Not yet published	Priority date (day/month/year) 25 February 1999 (25.02.99)
Applicant CAIRN HOLDINGS (UK) LIMITED et al	

1. The applicant is hereby notified of the date of receipt (except where the letters "NR" appear in the right-hand column) by the International Bureau of the priority document(s) relating to the earlier application(s) indicated below. Unless otherwise indicated by an asterisk appearing next to a date of receipt, or by the letters "NR", in the right-hand column, the priority document concerned was submitted or transmitted to the International Bureau in compliance with Rule 17.1(a) or (b).
2. This updates and replaces any previously issued notification concerning submission or transmittal of priority documents.
3. An asterisk(*) appearing next to a date of receipt, in the right-hand column, denotes a priority document submitted or transmitted to the International Bureau but not in compliance with Rule 17.1(a) or (b). In such a case, the attention of the applicant is directed to Rule 17.1(c) which provides that no designated Office may disregard the priority claim concerned before giving the applicant an opportunity, upon entry into the national phase, to furnish the priority document within a time limit which is reasonable under the circumstances.
4. The letters "NR" appearing in the right-hand column denote a priority document which was not received by the International Bureau or which the applicant did not request the receiving Office to prepare and transmit to the International Bureau, as provided by Rule 17.1(a) or (b), respectively. In such a case, the attention of the applicant is directed to Rule 17.1(c) which provides that no designated Office may disregard the priority claim concerned before giving the applicant an opportunity, upon entry into the national phase, to furnish the priority document within a time limit which is reasonable under the circumstances.

<u>Priority date</u>	<u>Priority application No.</u>	<u>Country or regional Office or PCT receiving Office</u>	<u>Date of receipt of priority document</u>
25 Febr 1999 (25.02.99)	9904279.8	GB	13 Apr 2000 (13.04.00)

The International Bureau of WIPO
34, chemin des Colombettes
1211 Geneva 20, Switzerland

Authorized officer

Carlos Naranjo

bw

Facsimile No. (41-22) 740.14.35

Telephone No. (41-22) 338.83.38

PCT

REQUEST

The undersigned requests that the present international application be processed according to the Patent Cooperation Treaty.

For receiving Office use only

International Application No.

International Filing Date

Name of receiving Office and "PCT International Application"

Applicant's or agent's file reference P57753W0
(if desired) (12 characters maximum)

Box No. I TITLE OF INVENTION	
MIXTURES OF MATERIALS	
Box No. II APPLICANT	
Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)	
CAIRN HOLDINGS (UK) LIMITED Carrington Business Park, Carrington, Manchester. M31 4YR UNITED KINGDOM	
<input type="checkbox"/> This person is also inventor. Telephone No. Facsimile No. Teleprinter No.	
State (that is, country) of nationality: UNITED KINGDOM	State (that is, country) of residence: UNITED KINGDOM
This person is applicant for the purposes of: <input type="checkbox"/> all designated States <input checked="" type="checkbox"/> all designated States except the United States of America <input type="checkbox"/> the United States of America only <input type="checkbox"/> the States indicated in the Supplemental Box	
Box No. III FURTHER APPLICANT(S) AND/OR (FURTHER) INVENTOR(S)	
Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)	
CLIFFORD BRUCE POLLITT Cuerdon Cottage, Cuerdon Driver, Thelwall, Warrington, Cheshire. WA4 3JU (GB)	
This person is: <input type="checkbox"/> applicant only <input checked="" type="checkbox"/> applicant and inventor <input type="checkbox"/> inventor only (If this check-box is marked, do not fill in below.)	
State (that is, country) of nationality: UNITED KINGDOM	State (that is, country) of residence: UNITED KINGDOM
This person is applicant for the purposes of: <input type="checkbox"/> all designated States <input type="checkbox"/> all designated States except the United States of America <input checked="" type="checkbox"/> the United States of America only <input type="checkbox"/> the States indicated in the Supplemental Box	
<input type="checkbox"/> Further applicants and/or (further) inventors are indicated on a continuation sheet.	
Box No. IV AGENT OR COMMON REPRESENTATIVE; OR ADDRESS FOR CORRESPONDENCE	
The person identified below is hereby/has been appointed to act on behalf of the applicant(s) before the competent International Authorities as: <input checked="" type="checkbox"/> agent <input type="checkbox"/> common representative	
Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)	
AJELLO, Micha l John URQUHART-DYKES & LORD Greg's Buildings, 1 Booth Street, Manchester. M2 4DU (GB)	
Telephone No. 0161 832 9353 Facsimile No. 0161 828 6500 Teleprinter No.	
<input type="checkbox"/> Address for correspondence: Mark this check-box where no agent or common representative is/has been appointed and the space above is used instead to indicate a special address to which correspondence should be sent.	

Box No.V DESIGNATION OF STATES

The following designations are hereby made under Rule 4.9(a) (mark the applicable check-boxes; at least one must be marked):

National Patent

- ☐ AP ARIPO Patent: GH Ghana, GM Gambia, KE Kenya, LS Lesotho, MW Malawi, SD Sudan, SL Sierra Leone, SZ Swaziland, TZ United Republic of Tanzania, UG Uganda, ZW Zimbabwe, and any other State which is a Contracting State of the Harare Protocol and of the PCT
- ☐ EA Eurasian Patent: AM Armenia, AZ Azerbaijan, BY Belarus, KG Kyrgyzstan, KZ Kazakhstan, MD Republic of Moldova, RU Russian Federation, TJ Tajikistan, TM Turkmenistan, and any other State which is a Contracting State of the Eurasian Patent Convention and of the PCT
- ☒ EP European Patent: AT Austria, BE Belgium, CH and LI Switzerland and Liechtenstein, CY Cyprus, DE Germany, DK Denmark, ES Spain, FI Finland, FR France, GB United Kingdom, GR Greece, IE Ireland, IT Italy, LU Luxembourg, MC Monaco, NL Netherlands, PT Portugal, SE Sweden, and any other State which is a Contracting State of the European Patent Convention and of the PCT
- ☐ OA OAPI Patent: BF Burkina Faso, BJ Benin, CF Central African Republic, CG Congo, CI Côte d'Ivoire, CM Cameroon, GA Gabon, GN Guinea, GW Guinea-Bissau, ML Mali, MR Mauritania, NE Niger, SN Senegal, TD Chad, TG Togo, and any other State which is a member State of OAPI and a Contracting State of the PCT (if other kind of protection or treatment desired, specify on dotted line)

National Patent (if other kind of protection or treatment desired, specify on dotted line):

- | | |
|---|---|
| <input type="checkbox"/> AE United Arab Emirates | <input type="checkbox"/> LR Liberia |
| <input type="checkbox"/> AL Albania | <input type="checkbox"/> LS Lesotho |
| <input type="checkbox"/> AM Armenia | <input type="checkbox"/> LT Lithuania |
| <input type="checkbox"/> AT Austria | <input type="checkbox"/> LU Luxembourg |
| <input checked="" type="checkbox"/> AU Australia | <input type="checkbox"/> LV Latvia |
| <input type="checkbox"/> AZ Azerbaijan | <input type="checkbox"/> MA Morocco |
| <input type="checkbox"/> BA Bosnia and Herzegovina | <input type="checkbox"/> MD Republic of Moldova |
| <input type="checkbox"/> BB Barbados | <input type="checkbox"/> MG Madagascar |
| <input type="checkbox"/> BG Bulgaria | <input type="checkbox"/> MK The former Yugoslav Republic of Macedonia |
| <input type="checkbox"/> BR Brazil | <input type="checkbox"/> MN Mongolia |
| <input type="checkbox"/> BY Belarus | <input type="checkbox"/> MW Malawi |
| <input type="checkbox"/> CA Canada | <input type="checkbox"/> MX Mexico |
| <input type="checkbox"/> CH and LI Switzerland and Liechtenstein | <input type="checkbox"/> NO Norway |
| <input type="checkbox"/> CN China | <input type="checkbox"/> NZ New Zealand |
| <input type="checkbox"/> CR Costa Rica | <input type="checkbox"/> PL Poland |
| <input type="checkbox"/> CU Cuba | <input type="checkbox"/> PT Portugal |
| <input type="checkbox"/> CZ Czech Republic | <input type="checkbox"/> RO Romania |
| <input type="checkbox"/> DE Germany | <input type="checkbox"/> RU Russian Federation |
| <input type="checkbox"/> DK Denmark | <input type="checkbox"/> SD Sudan |
| <input type="checkbox"/> DM Dominica | <input type="checkbox"/> SE Sweden |
| <input type="checkbox"/> EE Estonia | <input type="checkbox"/> SG Singapore |
| <input type="checkbox"/> ES Spain | <input type="checkbox"/> SI Slovenia |
| <input type="checkbox"/> FI Finland | <input type="checkbox"/> SK Slovakia |
| <input type="checkbox"/> GB United Kingdom | <input type="checkbox"/> SL Sierra Leone |
| <input type="checkbox"/> GD Grenada | <input type="checkbox"/> TJ Tajikistan |
| <input type="checkbox"/> GE Georgia | <input type="checkbox"/> TM Turkmenistan |
| <input type="checkbox"/> GH Ghana | <input type="checkbox"/> TR Turkey |
| <input type="checkbox"/> GM Gambia | <input type="checkbox"/> TT Trinidad and Tobago |
| <input type="checkbox"/> HR Croatia | <input type="checkbox"/> TZ United Republic of Tanzania |
| <input type="checkbox"/> HU Hungary | <input type="checkbox"/> UA Ukraine |
| <input type="checkbox"/> ID Indonesia | <input type="checkbox"/> UG Uganda |
| <input type="checkbox"/> IL Israel | <input checked="" type="checkbox"/> US United States of America |
| <input type="checkbox"/> IN India | <input type="checkbox"/> UZ Uzbekistan |
| <input type="checkbox"/> IS Iceland | <input type="checkbox"/> VN Viet Nam |
| <input checked="" type="checkbox"/> JP Japan | <input type="checkbox"/> YU Yugoslavia |
| <input type="checkbox"/> KE Kenya | <input checked="" type="checkbox"/> ZA South Africa |
| <input type="checkbox"/> KG Kyrgyzstan | <input type="checkbox"/> ZW Zimbabwe |
| <input type="checkbox"/> KP Democratic People's Republic of Korea | |
| <input type="checkbox"/> KR Republic of Korea | |
| <input type="checkbox"/> KZ Kazakhstan | |
| <input type="checkbox"/> LC Saint Lucia | |
| <input type="checkbox"/> LK Sri Lanka | |

Check-boxes reserved for designating States which have become party to the PCT after issuance of this sheet:

- ☐
 ☐

Precautionary Designation Statement: In addition to the designations made above, the applicant also makes under Rule 4.9(b) all other designations which would be permitted under the PCT except any designation(s) indicated in the Supplemental Box as being excluded from the scope of this statement. The applicant declares that those additional designations are subject to confirmation and that any designation which is not confirmed before the expiration of 15 months from the priority date is to be regarded as withdrawn by the applicant at the expiration of that time limit. (Confirmation (including fees) must reach the receiving Office within the 15-month time limit.)

Sheet No. ... 3 ...

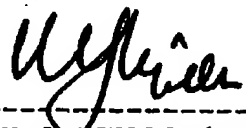
Box No. VI PRIORITY CLAIM					<input type="checkbox"/> Further priority claims are indicated in the Supplemental Box.
Filing date of earlier application (day/month/year)	Number of earlier application	Where earlier application is:			
		national application: country	regional application:* regional Office	international application: receiving Office	
item (1) 25-02-99	9904279.8	GB			
item (2)					
item (3)					

☒ The receiving Office is requested to prepare and transmit to the International Bureau a certified copy of the earlier application(s) (only if the earlier application was filed with the Office which for the purposes of the present international application is the receiving Office) identified above as item(s):

* Where the earlier application is an ARIPO application, it is mandatory to indicate in the Supplemental Box at least one country party to the Paris Convention for the Protection of Industrial Property for which that earlier application was filed (Rule 4.10(b)(ii)). See Supplemental Box.

Box No. VII INTERNATIONAL SEARCHING AUTHORITY			
Choice of International Searching Authority (ISA) (if two or more International Searching Authorities are competent to carry out the international search, indicate the Authority chosen; the two-letter code may be used):		Request to use results of earlier search; reference to that search (if an earlier search has been carried out by or requested from the International Searching Authority):	
ISA /		Date (day/month/year)	Number Country (or regional Office)

Box No. VIII CHECK LIST; LANGUAGE OF FILING	
This international application contains the following number of sheets: request : 3 description (excluding sequence listing part) : 7 claims : 2 abstract : 1 drawings : 0 sequence listing part of description : Total number of sheets : 13	This international application is accompanied by the item(s) marked below: 1. <input type="checkbox"/> fee calculation sheet 2. <input type="checkbox"/> separate signed power of attorney 3. <input type="checkbox"/> copy of general power of attorney; reference number, if any: 4. <input type="checkbox"/> statement explaining lack of signature 5. <input type="checkbox"/> priority document(s) identified in Box No. VI as item(s): 6. <input type="checkbox"/> translation of international application into (language): 7. <input type="checkbox"/> separate indications concerning deposited microorganism or other biological material 8. <input type="checkbox"/> nucleotide and/or amino acid sequence listing in computer readable form 9. <input type="checkbox"/> other (specify):
Figure of the drawings which should accompany the abstract:	Language of filing of the international application: ENGLISH

Box No. IX SIGNATURE OF APPLICANT OR AGENT	
Next to each signature, indicate the name of the person signing and the capacity in which the person signs (if such capacity is not obvious from reading the request).	
 ----- M J AJELLO (Agent)	

For receiving Office use only	
1. Date of actual receipt of the purported international application: 3. Corrected date of actual receipt due to later but timely received papers or drawings completing the purported international application: 4. Date of timely receipt of the required corrections under PCT Article 11(2): 5. International Searching Authority (if two or more are competent): ISA /	2. Drawings: <input type="checkbox"/> received: <input type="checkbox"/> not received: 6. <input type="checkbox"/> Transmittal of search copy delayed until search fee is paid.

For International Bureau use only	
Date of receipt of the record copy by the International Bureau:	

PCT

REC'D 18 JUN 2001

WIPO

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference P57753WO	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/GB00/00610	International filing date (day/month/year) 22/02/2000	Priority date (day/month/year) 25/02/1999
International Patent Classification (IPC) or national classification and IPC C04B26/04		
Applicant CAIRN HOLDINGS (UK) LIMITED et al.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.



2. This REPORT consists of a total of 4 sheets, including this cover sheet.

☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 3 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 13/09/2000	Date of completion of this report 13.06.2001
Name and mailing address of the international preliminary examining authority:  European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Tx: 31 651 epo nl Fax: +31 70 340 - 3016	Authorized officer Siemens, T Telephone No. +31 70 340 3642 

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/GB00/00610

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

Description, pages:

2-7 as originally filed

1 as received on 27/03/2001 with letter of 22/03/2001

Claims, No.:

1-13 as received on 27/03/2001 with letter of 22/03/2001

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:
- ☐ the drawings, sheets:

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/GB00/00610

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims	1-13
	No:	Claims	
Inventive step (IS)	Yes:	Claims	
	No:	Claims	1-13
Industrial applicability (IA)	Yes:	Claims	1-13
	No:	Claims	

- 2. Citations and explanations**
see separate sheet

Paragraph V

Reference is made to the following document:

D1: WO-A-9821159

1. Novelty

D1 discloses a settable mixture comprising polybutadiene, a flow enhancing liquid and a dry particulate material. No mention is however made of contents of Aluminium- and Ferrous oxide.

Therefore claims 1-13 fulfill the requirements of novelty.

2. Inventive step

The distinguishing feature between the present application and the closest prior art as disclosed in D1 is the use of a specific particulate material, namely one which contains no more than 2% Al-oxide and no more than 1% Ferrous oxide.

There is however no technical effect (e.g. in form of comparative examples to the closest prior art as disclosed in D1) which is demonstrated due to the use of this specific ingredient. The objective technical problem is therefore the preparation of a further settable mixture composition.

A skilled person, being confronted with this problem would make use of different fractions of dried silica, and consequently also of the claimed fraction, since this falls within the routine experimentation work of a skilled person.

The use of the specific component does therefore not involve an inventive step. Hence claims 1-13 as presently filed can not be considered as being inventive.

- 1 -

EPO - DG 1
27. 03. 2001

(42)

MIXTURES OF MATERIALS

THIS INVENTION relates to mixtures of materials.

According to the invention, a settable mixture comprises polybutadiene, a flow-enhancing liquid, and dry particulate material, the latter having no more than 2% water content and containing no more than 2% Aluminium Oxide, and no more than 1% Ferrous Oxide, the percentages being by weight of particulate material.

The flow-enhancing liquid may be a flow-enhancing solvent.

The particulate material may comprise dry sand being at least 90% silica sand; ground or crushed glass, for example, including recycled glass and ground or crushed glass products which may include some non-glass material; ground slate or other mineral, for example, granite or stone. However, preferably the particulate material as a whole should not contain more than 1.4% by weight of Aluminium Oxide, nor more than 0.5% by weight of Ferrous Oxide.

The particulate material may be a mixture of different materials.

The polybutadiene may be in liquid form.

The settable mixture may contain a re-odouriser.

EPO - DG 1

-8-

27. 03. 2001

CLAIMS

(42)

1. A settable mixture comprising polybutadiene, a flow-enhancing liquid, and dry particulate material, the latter having no more than 2% water content and containing no more than 2% Aluminium Oxide, and no more than 1% Ferrous Oxide, the percentages being by weight of particulate material.
2. A settable mixture according to Claim 1, wherein the flow-enhancing liquid is a flow-enhancing solvent.
3. A settable mixture according to Claim 1 or Claim 2, wherein the particulate material comprises dry sand being at least 90% silica sand.
4. A settable mixture according to Claim 1 or Claim 2, wherein the particulate material includes a mixture of materials containing no more than 1.4% by weight of Aluminium Oxide, and no more than 0.5% by weight of Ferrous Oxide.
5. A settable mixture according to any preceding claim, wherein the polybutadiene is provided in liquid form.
6. A settable mixture according to any preceding claim, including a re-odoriser.

-9-

7. A settable mixture according to Claim 6, wherein the proportion of the re-odouriser within the mixture is between 0.001% and 5% by weight of the settable mixture.
8. A settable mixture according to Claim 2, wherein the flow enhancing solvent is a de-aromatised hydrocarbon.
9. A settable mixture according to Claim 1, wherein the particulate material is sand of special fraction size in the range of grain size 0.01mm to 0.85mm and is dried to have a maximum 2% water content by weight absorbed from the atmosphere after drying.
10. A settable mixture according to claim 1 or Claim 9, wherein the particulate material is sand consisting of grains having an angular or sub-angular shape.
11. A settable mixture according to any preceding claim, bagged so as to be contained in an oxygen-free atmosphere.
12. A settable mixture according to any preceding claim, including a colourant.
13. A settable mixture according to Claim 1, wherein the material is contained in an oxygen-free atmosphere containing an inert gas.

INTERNATIONAL SEARCH REPORT

International Application No

PCT/GB 00/00610

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 C04B26/04

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 C04B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 98 21159 A (CAIRN HOLDINGS UK ; POLLITT CLIFFORD BRUCE (GB)) 22 May 1998 (1998-05-22) page 5 claims 1-12	1-11
A	EP 0 146 098 A (MARQUARDT GOTZ) 26 June 1985 (1985-06-26) claims 1-31	1-11
A	WO 92 08679 A (GUELS VOLKER) 29 May 1992 (1992-05-29) claims 1-20	1-11



Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

* Special categories of cited documents :

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
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Date of the actual completion of the international search

29 May 2000

Date of mailing of the international search report

07/06/2000

Name and mailing address of the ISA

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Siemens, T

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/GB 00/00610

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 9821159	A	22-05-1998	AU 4958097 A EP 0958257 A	03-06-1998 24-11-1999
EP 0146098	A	26-06-1985	DE 3344783 A	20-06-1985
WO 9208679	A	29-05-1992	DE 4035359 C AT 121059 T AU 652779 B AU 8617891 A CA 2098394 A CN 1061424 A DE 59105204 D EP 0556194 A JP 6501504 T KR 9702026 B PT 99454 A ZA 9108776 A	16-04-1992 15-04-1995 08-09-1994 11-06-1992 08-05-1992 27-05-1992 18-05-1995 25-08-1993 17-02-1994 21-02-1997 30-09-1992 26-08-1992

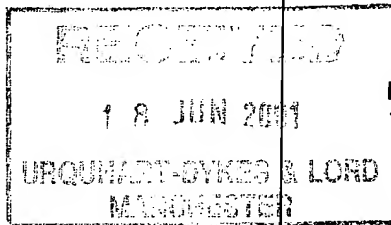
PATENT COOPERATION TREATY

From the
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

PCT

To:

AJELLO, Michael J.
URQUHART DYKES & LORD,
GREG'S BUILDINGS
1, Booth Street,
Manchester M2 4DU
GRANDE BRETAGNE



NOTIFICATION OF TRANSMITTAL OF
THE INTERNATIONAL PRELIMINARY
EXAMINATION REPORT
(PCT Rule 71.1)

Date of mailing
(day/month/year) 13.06.2001

Applicant's or agent's file reference
P57753WO

IMPORTANT NOTIFICATION

International application No.
PCT/GB00/00610

International filing date (day/month/year)
22/02/2000

Priority date (day/month/year)
25/02/1999

Applicant
CAIRN HOLDINGS (UK) LIMITED et al.

1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary examination report and its annexes, if any, established on the international application.
2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.
4. **REMINDER**

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices) (Article 39(1)) (see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide.

Name and mailing address of the IPEA/



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INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference P57753WO		FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)
International application No. PCT/GB00/00610	International filing date (day/month/year) 22/02/2000	Priority date (day/month/year) 25/02/1999
International Patent Classification (IPC) or national classification and IPC C04B26/04		
Applicant CAIRN HOLDINGS (UK) LIMITED et al.		
<p>1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 4 sheets, including this cover sheet.</p> <p><input checked="" type="checkbox"/> This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).</p> <p>These annexes consist of a total of 3 sheets.</p>		
<p>3. This report contains indications relating to the following items:</p> <ul style="list-style-type: none"> I <input checked="" type="checkbox"/> Basis of the report II <input type="checkbox"/> Priority III <input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability IV <input type="checkbox"/> Lack of unity of invention V <input checked="" type="checkbox"/> Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement VI <input type="checkbox"/> Certain documents cited VII <input type="checkbox"/> Certain defects in the international application VIII <input type="checkbox"/> Certain observations on the international application 		
Date of submission of the demand 13/09/2000		Date of completion of this report 13.06.2001
Name and mailing address of the international preliminary examining authority:  European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Tx: 31 651 epo nl Fax: +31 70 340 - 3016		Authorized officer Siemens, T Telephone No. +31 70 340 3642



**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/GB00/00610

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

Description, pages:

2-7	as originally filed		
1	as received on	27/03/2001	with letter of 22/03/2001

Claims, No.:

1-13	as received on	27/03/2001	with letter of 22/03/2001
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2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:
- ☐ the drawings, sheets:

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/GB00/00610

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims	1-13
	No:	Claims	
Inventive step (IS)	Yes:	Claims	
	No:	Claims	1-13
Industrial applicability (IA)	Yes:	Claims	1-13
	No:	Claims	

- 2. Citations and explanations
see separate sheet**

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/GB00/00610

Paragraph V

Reference is made to the following document:

D1: WO-A-9821159

1. Novelty

D1 discloses a settable mixture comprising polybutadiene, a flow enhancing liquid and a dry particulate material. No mention is however made of contents of Aluminium- and Ferrous oxide.

Therefore claims 1-13 fulfill the requirements of novelty.

2. Inventive step

The distinguishing feature between the present application and the closest prior art as disclosed in D1 is the use of a specific particulate material, namely one which contains no more than 2% Al-oxide and no more than 1% Ferrous oxide.

There is however no technical effect (e.g. in form of comparative examples to the closest prior art as disclosed in D1) which is demonstrated due to the use of this specific ingredient. The objective technical problem is therefore the preparation of a further settable mixture composition.

A skilled person, being confronted with this problem would make use of different fractions of dried silica, and consequently also of the claimed fraction, since this falls within the routine experimentation work of a skilled person.

The use of the specific component does therefore not involve an inventive step. Hence claims 1-13 as presently filed can not be considered as being inventive.

- 1 -

EPO - DG 1
27. 03. 2001

(42)

MIXTURES OF MATERIALS

THIS INVENTION relates to mixtures of materials.

According to the invention, a settable mixture comprises polybutadiene, a flow-enhancing liquid, and dry particulate material, the latter having no more than 2% water content and containing no more than 2% Aluminium Oxide, and no more than 1% Ferrous Oxide, the percentages being by weight of particulate material.

The flow-enhancing liquid may be a flow-enhancing solvent.

The particulate material may comprise dry sand being at least 90% silica sand; ground or crushed glass, for example, including recycled glass and ground or crushed glass products which may include some non-glass material; ground slate or other mineral, for example, granite or stone. However, preferably the particulate material as a whole should not contain more than 1.4% by weight of Aluminium Oxide, nor more than 0.5% by weight of Ferrous Oxide.

The particulate material may be a mixture of different materials.

The polybutadiene may be in liquid form.

The settable mixture may contain a re-odouriser.

EPO - DG 1

27. 03. 2001

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CLAIMS

(42)

1. A settable mixture comprising polybutadiene, a flow-enhancing liquid, and dry particulate material, the latter having no more than 2% water content and containing no more than 2% Aluminium Oxide, and no more than 1% Ferrous Oxide, the percentages being by weight of particulate material.
2. A settable mixture according to Claim 1, wherein the flow-enhancing liquid is a flow-enhancing solvent.
3. A settable mixture according to Claim 1 or Claim 2, wherein the particulate material comprises dry sand being at least 90% silica sand.
4. A settable mixture according to Claim 1 or Claim 2, wherein the particulate material includes a mixture of materials containing no more than 1.4% by weight of Aluminium Oxide, and no more than 0.5% by weight of Ferrous Oxide.
5. A settable mixture according to any preceding claim, wherein the polybutadiene is provided in liquid form.
6. A settable mixture according to any preceding claim, including a re-odouriser.

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7. A settable mixture according to Claim 6, wherein the proportion of the re-odoriser within the mixture is between 0.001% and 5% by weight of the settable mixture.
8. A settable mixture according to Claim 2, wherein the flow enhancing solvent is a de-aromatised hydrocarbon.
9. A settable mixture according to Claim 1, wherein the particulate material is sand of special fraction size in the range of grain size 0.01mm to 0.85mm and is dried to have a maximum 2% water content by weight absorbed from the atmosphere after drying.
10. A settable mixture according to claim 1 or Claim 9, wherein the particulate material is sand consisting of grains having an angular or sub-angular shape.
11. A settable mixture according to any preceding claim, bagged so as to be contained in an oxygen-free atmosphere.
12. A settable mixture according to any preceding claim, including a colourant.
13. A settable mixture according to Claim 1, wherein the material is contained in an oxygen-free atmosphere containing an inert gas.

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INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁷ : C04B 26/04	A1	(11) International Publication Number: WO 00/50355 (43) International Publication Date: 31 August 2000 (31.08.00)
<p>(21) International Application Number: PCT/GB00/00610</p> <p>(22) International Filing Date: 22 February 2000 (22.02.00)</p> <p>(30) Priority Data: 9904279.8 25 February 1999 (25.02.99) GB</p> <p>(71) Applicant (for all designated States except US): CAIRN HOLDINGS (UK) LIMITED [GB/GB]; Carrington Business Park, Carrington, Manchester M31 4YR (GB).</p> <p>(72) Inventor; and (75) Inventor/Applicant (for US only): POLLITT, Clifford, Bruce [GB/GB]; Cuerdon Cottage, Cuerdon Driver, Thelwall, Warrington, Cheshire WA4 3JU (GB).</p> <p>(74) Agent: AJELLO, Michael, John; Urquhart-Dykes & Lord, Greg's Buildings, 1 Booth Street, Manchester M2 4DU (GB).</p>		<p>(81) Designated States: AU, JP, US, ZA, European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE).</p> <p>Published <i>With international search report.</i></p>
<p>(54) Title: MIXTURES OF MATERIALS</p> <p>(57) Abstract</p> <p>A settable but non-adhesive mixture of materials which may be used in the laying of tiles and paving whereby the mixture may fill the gaps between individual tiles or paving elements to act as a filler to stabilise the elements without sticking to the surfaces thereof, the mixture including a particulate material which contains no more than 2 % Aluminium Oxide and no more than 1 % Ferrous Oxide thus to ensure a stabilised chemical composition of the mixture and to minimise staining of the tiles or paving elements when applied thereto.</p>		

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MIXTURES OF MATERIALS

THIS INVENTION relates to mixtures of materials.

According to the invention, a settable mixture comprises polybutadiene, a flow-enhancing liquid, and substantially dry particulate material, the latter containing no more than 2% Aluminium Oxide, and no more than 1% Ferrous Oxide, the percentages being by weight of particulate material.

The flow-enhancing liquid may be a flow-enhancing solvent.

The particulate material may comprise dry sand being at least 90% silica sand; ground or crushed glass, for example, including recycled glass and ground or crushed glass products which may include some non-glass material; ground slate or other mineral, for example, granite or stone. However, preferably the particulate material as a whole should not contain more than 1.4% by weight of Aluminium Oxide, nor more than 0.5% by weight of Ferrous Oxide.

The particulate material may be a mixture of different materials.

The polybutadiene may be in liquid form.

The settable mixture may contain a re-odoriser.

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The proportion of the re-odoriser may be between 0.001% and 5% by weight of the settable mixture.

An example of a flow-enhancing liquid is Shellsol D25SBP 140/165.

The settable mixture is not adhesive, i.e. it is not tacky to the touch and can, for example, be placed on laid tiles and paving and swept into the gaps using a brush or the like, or placed directly into the gaps between the tiles or paving to act as a filler without sticking to the surface of the tiles or paving.

The particles in the particulate material may be of uniform size or different sizes.

There may be additions, for example, colourants and/or reinforcing materials e.g. synthetic or carbon fibres.

Suitable re-odorisers are those sold under the name FRAG 6M 3467 by Gale and Mount Limited, Manchester, England and MASQUADOR TF, by Protex Limited, Leeds, England.

The sand is preferably of special fraction size predominantly in the range of grain size 0.01mm to 0.85mm and is dried to have a maximum 2% water content by weight absorbed from the atmosphere after drying.

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The mixture may be bagged so as to be contained in an essentially oxygen-free atmosphere.

The invention includes paving, flooring and wall elements secured or spaced apart by said mixture when set.

The invention may be performed in various ways and some specific embodiments with possible modifications will now be described by way of example.

The invention provides a mixture which is settable on exposure to atmosphere (oxygen) and can be used indoors or outdoors for use as a screed or for pointing paving or flooring e.g. stones, cobbles, setts, tiles, concrete or clay or stone slabs; or for pointing wall tiles or bricks.

In general the mixture comprises polybutadiene, a flow-enhancing liquid and particulate material. The polybutadiene is provided in liquid form prior to mixing.

The particulate material which should be substantially dry, may, for example, comprise dry sand; ground or crushed glass, for example, including recycled glass and ground or crushed television tubes or fluorescent tubes which may include some non-glass material; ground slate or other mineral for example granite, stone; or a mixture of materials.

The flow-enhancing liquid, in addition to improving

- 4 -

workability of the mixture, also improves cross-linking strengths within the mixture and provides for adequate flexural and compressive strengths in the compound after setting, making it particularly suitable for jointing and screeding in areas where the paving or the like comes under extreme stresses. It shall occupy between 0.1% and 0.4%, by volume, of the settable mixture.

The flow-enhancing liquid shall preferably have an evaporation index to DIN 53170 of less than 50. It shall also preferably be a de-aromatised hydrocarbon. An example is Shellsol D25 SBP 140/165, having an evaporation index of 20.

If glass particles are included in the particulate material, these may be of uniform size or different sizes.

The term dry sand includes sand which has been dried and has then absorbed some moisture from the atmosphere, but preferably no greater than 2% by weight.

A particularly suitable form of liquid polybutadiene is that sold under the name Univest-S by Promacon Dr. Schirm GmbH, of Dortmund, Germany, and ideally occupies the settable mixture in an amount of between 1.5% and 6% by volume, and preferably between 2% and 4% by volume.

A particularly preferred sand is kiln dried silica sand of special fraction size and having a maximum of 1.4% of Aluminium

Oxide, a maximum of 0.5% Ferrous Oxide and a maximum of 1.5% combined Potassium Oxide and Sodium Oxide, these percentages being by weight of the sand.

The fraction size should be a good mix predominantly within the range 0.01mm to 0.85mm. At least 40% of the sand should preferably average 0.26mm in size. Rounded or sub-rounded grains can be used but a predominance of grains having an angular or sub-angular shape is preferred.

Examples of suitable settable mixtures are:-

1.	2% - 4%	By volume	Polybutadiene
	0.1-0.4%	By volume	Shellsol D25
	0.007%	By volume	Re-Odoriser
	Balance %	By volume	Kiln dried silica sand special fraction size (as specified above)
2.	2% - 4%	By volume	Polybutadiene
	0.1-0.4%	By volume	Shellsol D25
	1% - 5%	By volume	Synthetic or carbon fibres
	0.007%	By volume	Re-Odoriser
	Balance %	By volume	Kiln dried silica sand special fraction size (as specified above)
3.	2% - 4%	By volume	Polybutadiene
	0.1-0.4%	By volume	Shellsol D25
	0.1%-0.5%	By volume	Dry colour pigment
	0.007%	By volume	Re-Odoriser
	Balance %	By volume	Kiln dried silica sand special fraction size (as specified above)
4.	2% - 4%	By volume	Polybutadiene
	0.1-0.4%	By volume	Shellsol D25
	1% - 5%	By volume	Synthetic or carbon fibres
	0.1%-0.5%	By volume	Dry colour pigment
	0.007%	By volume	Re-Odoriser
	Balance %	By volume	Kiln dried silica sand special fraction size (as specified above)

The above examples contain sand as the particulate filler but other materials as referred to above may be used with the sand.

By ensuring that the sand content of the mixture is predominantly silica sand i.e. having a Silicon Oxide content of at least 90%, a number of advantages occur, namely:-

- a) staining of adjacent paving surfaces is minimised or eliminated;
- b) a chemical reaction within the bagged mixture which can retard its setting time, is prevented (this reaction may be experienced with sands falling outside the limits specified);
- c) any such chemical reaction which could also significantly reduce the shelf life of the bagged mixture, is avoided;
- d) keeping the mixture dry for a considerable time after application is not necessary since the setting time is kept as short as possible;
- e) a reduced setting time enables the mixture to be used to fill deeper joints between paving without the risk of ingress of moisture from the ground beneath.

The re-odoriser is required particularly for use in internal and confined places but is also suitable for external applications when the polybutadiene alone can have a quite unpleasant odour.

- 7 -

The mixture may contain a colourant for ease of identity or for aesthetic purposes.

The mixing is done quickly and preferably by machine, to avoid or limit any setting which might occur due to heat and exposure to atmospheric oxygen.

After mixing, the mixture is placed in bags or other convenient containers, and vacuum packed to remove oxygen (air) and thus suspend the setting process in a substantially oxygen-free atmosphere until the bag is opened. The mixture may be contained in convenient amounts. The bags are preferably housed within impact-resistant boxes, to prevent perforation and for ease of transportation and storage.

If required, to maintain flexibility in the bag, the extracted air may be replaced by a small volume of an inert gas such as carbon dioxide or nitrogen.

CLAIMS

1. A settable mixture comprising polybutadiene, a flow-enhancing liquid, and substantially dry particulate material, the latter containing no more than 2% Aluminium Oxide, and no more than 1% of Ferrous Oxide, the percentages being by weight of particulate material.
2. A settable mixture according to Claim 1, wherein the flow-enhancing liquid is a flow-enhancing solvent.
3. A settable mixture according to Claim 1 or Claim 2, wherein the particulate material comprises dry sand being at least 90% silica sand.
4. A settable mixture according to Claim 1 or Claim 2, wherein the particulate material includes a mixture of materials containing no more than 1.4% by weight of Aluminium Oxide, and no more than 0.5% by weight of Ferrous Oxide.
5. A settable mixture according to any preceding claim, wherein the polybutadiene is provided in liquid form.
6. A settable mixture according to any preceding claim, including a re-odoriser.
7. A settable mixture according to Claim 6, wherein the

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proportion of the re-odoriser within the mixture is between 0.001% and 5% by weight of the settable mixture.

8. A settable mixture according to Claim 2, wherein the flow enhancing solvent is a de-aromatised hydrocarbon.

9. A settable mixture according to Claim 1, wherein the particulate material is sand of special fraction size in the range of grain size 0.01mm to 0.85mm and is dried to have a maximum 2% water content by weight absorbed from the atmosphere after drying.

10. A settable mixture according to claim 1 or Claim 9, wherein the particulate material is sand consisting predominantly of grains having an angular or sub-angular shape.

11. A settable mixture according to any preceding claim, bagged so as to be contained in an essentially oxygen-free atmosphere.

12. A settable mixture according to any preceding claim, including a colourant.

13. A settable mixture according to Claim 1, wherein the material is contained in an essentially oxygen-free atmosphere containing an inert gas.

INTERNATION SEARCH REPORT

Intern Application No

PCT/GB 00/00610

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 C04B26/04

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 C04B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 98 21159 A (CAIRN HOLDINGS UK ; POLLITT CLIFFORD BRUCE (GB)) 22 May 1998 (1998-05-22) page 5 claims 1-12	1-11
A	EP 0 146 098 A (MARQUARDT GOTZ) 26 June 1985 (1985-06-26) claims 1-31	1-11
A	WO 92 08679 A (GUELS VOLKER) 29 May 1992 (1992-05-29) claims 1-20	1-11

☐ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

29 May 2000

Date of mailing of the international search report

07/06/2000

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Siemens, T

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/GB 00/00610

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 9821159 A	22-05-1998	AU 4958097 A EP 0958257 A	03-06-1998 24-11-1999
EP 0146098 A	26-06-1985	DE 3344783 A	20-06-1985
WO 9208679 A	29-05-1992	DE 4035359 C AT 121059 T AU 652779 B AU 8617891 A CA 2098394 A CN 1061424 A DE 59105204 D EP 0556194 A JP 6501504 T KR 9702026 B PT 99454 A ZA 9108776 A	16-04-1992 15-04-1995 08-09-1994 11-06-1992 08-05-1992 27-05-1992 18-05-1995 25-08-1993 17-02-1994 21-02-1997 30-09-1992 26-08-1992

**DETAILS OF EFFORTS TO REACH NON-SIGNING INVENTOR AND
DETAILS OF REFUSAL OF NON-SIGNING INVENTOR TO SIGN
APPLICATION PAPERS FOR US PATENT APPLICATION SERIAL NO.
09/914329**

The following facts are relevant to attempts by Cairn Holdings (UK) Limited and the undersigned European patent attorney to obtain the inventor's signature.

1. On the 17th August, 2001 I wrote to John Andrews the current Managing Officer of Cairn Holdings (UK) Limited requesting that a declaration and power of attorney, and an assignment should be signed by Clifford Bruce Pollitt as the sole inventor in respect of this patent application. A copy of that letter is attached hereto.
2. On the 1st October, 2001 I wrote to Clifford Bruce Pollitt explaining the necessity for his signature upon the two forms for the patent application. A copy of that letter is attached hereto.
3. On the 8th October, 2001 I received from Mr. Pollitt a letter dated 3rd October, raising some points of uncertainty but in his letter he confuses the invention described and claimed in the present application with an invention described in an earlier application and conceived before Cairn Holdings (UK) Limited was formed. A copy of that letter is attached hereto.
4. On the 8th October, 2001 I wrote again to Mr. Pollitt to explain the circumstances and to identify the invention. A copy of that letter is attached hereto.
5. A further copy of that letter was sent to Mr. Pollitt as a reminder on the 20th November, 2001.
6. On the 8th November, 2001 I wrote to Mr. Pollitt reminding him of the need to sign and return the documents. A copy of that letter is attached hereto.
7. On the 14th November, 2001 Mr. Pollitt replied. A copy of that letter is attached hereto.
8. On the 4th March, 2002 I sent to Mr. Pollitt by Post Office Recorded Delivery a further letter enclosing further copies of the combined declaration and power of attorney, attached to the specification and claims, and an inventor's assignment, again asking Mr. Pollitt to sign the documents and return them to me as soon as possible i.e. within the next 7 to 10 days. A copy of that letter showing the Post Office Recorded Delivery slip and the enclosures with contents of the letter, are attached hereto.

9. On the 22nd March, 2002 I received an e-mail from Mr. Pollitt. A copy of that e-mail is attached hereto, together with my response of 26th March, 2002.
10. In view of Mr. Pollitt's refusal to sign the documents sent to him and in view of the ensuing correspondence I must conclude that Mr. Pollitt is still unwilling to sign the papers for the application. I know that he received the second set of papers sent to him on the 4th March, 2002. I must therefore conclude that this signifies his continuing refusal to sign the documents required in connection with this application.

Date: 26th March, 2002



Signature of person making statement
MICHAEL JOHN AJELLO
European Patent Attorney

Mr. C. B. Pollitt,
Cuerdon Cottage,
Cuerdon Drive,
Thelwall,
Warrington,
Cheshire. WA4 3JU

RECORDED DEL

4th March, 2002

Our Ref: P57753US/MJA/EB

Dear Bruce,

**Re: International Patent Application No. PCT/GB 00/00610
National Phase - USA**

Your letter of the 14th November, 2001 comments that you are taking legal advice in connection with the patent application mentioned above. However, I have heard nothing further from you and we have a deadline to work to in filing the declaration, power of attorney and petition at the US Patent Office in order that this US application may proceed.

The patent application is to a particular make-up of sand used in the mixture in order to avoid staining and a delay in setting time.

It is my information that this concept was conceived by you as a result of various trials of different sands, the conclusion being arrived at a result of those trials. It was also my understanding that this invention occurred while you were an employee of Cairn Holdings (UK) Limited. The British and the subsequent International applications were both filed in the name of Cairn Holdings (UK) Limited but it is a formality that we have also to include, as an applicant for the USA only, the person or persons to be named as inventor.

When the international application matured into a series of national applications, one of them in the USA, it was therefore inevitable that you would be mentioned as the applicant for the USA and so, for that application to proceed, we require your signature upon two formal documents which need to be filed at the US Patent Office in the near future. These are a combined declaration and power of attorney, and an inventor's assignment. These documents are enclosed and I would ask you now please to sign and return them to me as soon as possible.

In the event that you are still unwilling to sign these forms I would ask you please to confirm that decision so that the US Patent and Trade Mark Office can be informed accordingly.

I would be grateful to receive your reply within the next 7 to 10 days and of course I hope that your reply will be accompanied by the signed forms.

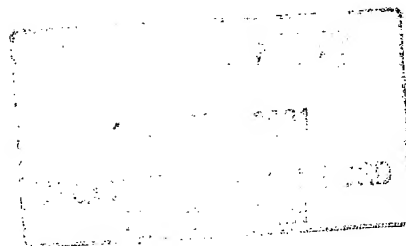
Yours sincerely,

M J AJELLO
URQUHART-DYKES & LORD

Cuerdon Cottage
Cuerdon Drive
Thelwall
Warrington
Cheshire WA4 3JU

14 November 2001

Mr M Ajello
Urquhart-Dykes & Lord
Greg's Buildings
1 Booth Street
MANCHESTER M2 4DU



Dear Michael

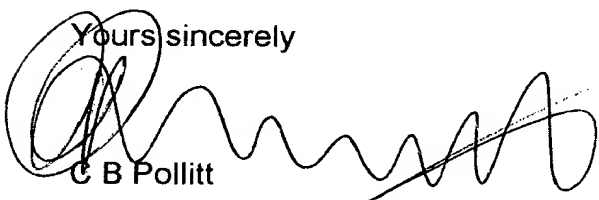
**International Patent Application No PCT/GB 00/00610 – Non Staining
Geofix® Compound**

I refer to your letter of 8 November and would advise you that I am still seeking legal advice. I have previously suggested to John Andrews that the patent go forward in the USA with my name and once the advice has been sought then the patent can be discussed at a later date.

Incidentally I do not appear to have a copy of your letter of 8th October and should be grateful if you could please send a copy.

Many thanks.

Yours sincerely


C B Pollitt

Mr. C. B. Pollitt,
Cuerdon Cottage,
Cuerdon Drive,
Thelwall,
Warrington,
Cheshire. WA4 3JU

13.11.01

8th November, 2001

Our Ref: P057753US/MJA/EB

Dear Bruce,

**Re: International Patent Application No. PCT/GB 00/00610
National Phase - USA**

I refer to my letter of the 8th October, 2001 and would be most grateful if you would return the signed documents referred to therein. We are required to file them at the US Patent Office by the 20th November, 2001.

With kind regards,

Yours sincerely,

M J AJELLO
URQUHART-DYKES & LORD

↑
due!



Mr. C. B. Pollitt,
Cuerdon Cottage,
Cuerdon Drive,
Thelwall,
Warrington,
Cheshire. WA4 3JU

8th October, 2001

Our Ref: P057753US/MJA/EB

Dear Bruce,

**Re: International Patent Application No. PCT/GB 00/00610
National Phase - USA**

Thank you for your letter of the 3rd October, 2001.

The patent application referred to above is a specific application to a particular make up of the sand used in the mixture, in order to avoid staining and a delay in setting time.

It was my information that this concept was conceived by you as a result of various trials of different sands, the conclusion being arrived at as a result of those trials. It was also my understanding that this invention occurred while you were an employee of Cairn Holdings (UK) Limited. I do not have a date when the invention was conceived but the application was filed initially in the United Kingdom on the 25th February, 1999 and so I imagine that the invention was conceived shortly before that. The British and the subsequent international applications were both filed in the name of Cairn Holdings (UK) Limited but as I explained it is a formality that we have also to include as an applicant, for the USA only, the person or persons to be named as inventor.

copy sent 20/11/01

When the international application matured into a series of national applications, one of them in the USA, it was therefore inevitable that you would be mentioned as the applicant for USA and so we require your signature upon two formal documents which need to be filed at the US Patent Office namely a combined declaration and power of attorney, and an inventors assignment. These are the documents which I understand John Andrews has asked you to execute.

I would be most grateful therefore if you would return the signed documents to me as soon as possible. We are required to file them at the US Patent Office by the 20th November, 2001 to avoid complications which could result in the application being refused.

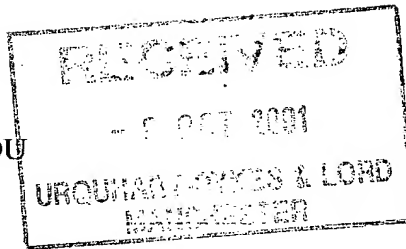
Yours sincerely,

M J AJELLO
URQUHART-DYKES & LORD

Cuerdon Cottage
Cuerdon Drive
Thelwall
Warrington
Cheshire WA4 3JU

3rd October 2001

Mr M Ajello
Urquhart-Dykes & Lord
Greg's Buildings
1 Booth Street
MANCHESTER M2 4DU



Dear Michael

International Patent Application No PCT/GB 00/00610 – Non Staining Geofix® Compound

I refer to your letter of 1st October 2001. From my recollection Non-Staining Geofix Compound was first patent applied for before Cairn Holdings (UK) Ltd was incorporated. In fact, the application was solely in my name and all initial fees paid were nothing to do with Cairn Holdings (UK) Ltd.

There were subsequent amendments to the application later, but I believe it is tantamount to the same patent. Also I note your comment that if I were an employee of the Company it would seem strange that the application was put in my name and the Company's.

Furthermore, I would be grateful if you could ascertain as to which Company you are referring to in paragraph 5 of your letter.

I look forward to hearing from you.

Yours sincerely


E B Pollitt

Mr. B.C. Pollitt,
Cuerdon Cottage,
Cuerdon Drive,
Thelwall,
Warrington.
WA4 3JU.

1st October, 2001

Our Ref: P57753US/MJA/LB

Dear Bruce,

Re: International Patent Application No. PCT/GB00/00610 - National Phase - USA

John Andrews has asked me to write to you concerning the US patent application which has been derived from the International application for the Non-staining Geofix Compound.

As you might recall, it is necessary when filing an International application to name as applicant both the company and the inventor(s). The latter is included as applicant only for the United States since it is a matter of formality under US practice that all patent applications must be filed in the name of the inventor or inventors and later assigned if required to the company.

It is my understanding that it was your intention that this series of applications should be filed in the name of Cairn Holdings (UK) Limited but as I say this was not possible for the United States and does require the formality of a brief assignment document transferring the rights from yourself to the company.

Also, I understand that you were an employee of the company at the time when the invention was conceived which, under Section 39 of the Patents Act, 1977, dictates that the invention belongs to the company.

In view of these facts and in order for us to progress the US application, I would be most grateful if you would sign the single sheet assignment deed which I believe John sent to you, and return it to me at your convenience.

If you are in any doubt as to the reasons or ramifications for this requirement do please give me a call and I will be only too pleased to run through it with you.

Finally, I trust that you are keeping well. It seems a long time since we spoke.

With kind regards.

Yours sincerely,

M.J. AJELLO
URQUHART-DYKES & LORD

cc: Mr. J. Andrews

Mr. J. Andrews,
Cairn Holdings (UK) Limited,
P O Box 258,
Northwich,
Cheshire. CW9 8TE

17th August, 2001

Our Ref: P57753WO/MJA/EB

Dear John,

**Re: International Patent Application No. PCT/GB 00/00610
NON-STAINING GEOFLX COMPOUND**

I understand from our telephone conversation yesterday that you wish to convert this application to the national phase in USA only and to the regional phase at the European Patent Office. We have an extra month to file at the EPO but the US case must be filed by the 25th August, 2001 and I enclose a declaration and assignment form to be signed by Bruce Pollitt. I would be grateful if you would get this back to me within the week so that I can FAX it to the US attorney.

Yours sincerely,

M J AJELLO
URQUHART-DYKES & LORD

**STATEMENT BY PERSON HAVING KNOWLEDGE THAT NONSIGNING
INVENTOR WAS EMPLOYEE OR OTHERWISE OBLIGATED TO PERSON
WITH SUFFICIENT PROPRIETARY INTEREST WHEN INVENTION MADE.**

This invention relating to mixtures of materials, and subject of US Application Serial No. 09/914329 was made by Clifford Bruce Pollitt during or about 1999 while he was an employee of Cairn Holdings (UK) Limited.

The nature of his duties of employment as Managing Director, and the particular responsibilities arising therefrom were such that an invention was reasonably expected to result, and he had a special obligation to further the interests of Cairn Holdings (UK) Limited. Under the provisions of Section 39(1)(a) and (b) of the UK Patents Act, 1977, the invention accordingly belongs to the employer, Cairn Holdings (UK) Limited under UK Law, and a court of competent jurisdiction would, by weight of its authority, award title to the invention to Cairn Holdings (UK) Limited.

Date: 26th March, 2002



Signature of person making statement
MICHAEL JOHN AJELLO
European Patent Attorney